Turning Bytes of Data into a Farming Boon

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In an industry built around nature, the earth and the environment, it would have been hard to predict – even 20 years ago – the integral role technology would ultimately play in the agriculture industry. The modern farm operation is using satellite- and microchip-driven equipment, high-tech seeds and sensors and software that ration fertilizer for precision application. While agricultural technologies like these have increasingly become standard operating procedure for today's successful farmers, it's the data inherent within these technologies that may prove the most powerful farming innovation of all.

Across industries, including agriculture, "big data" has become a business concept, process and objective, all wrapped up into one tenuous term. Agricultural big data is data generated and owned by a farming operation, and then processed, analyzed and leveraged for business insights and advantage. While farmers have been creating mountains of data for as long they have been using more technologically advanced practices and equipment, until relatively recently the industry has been sitting on this information and not using it to influence business planning and best practices.

The transformational promise of big data in agriculture has been widely analyzed. (We have identified that the following link is no longer active, and it has been removed.) reports that big data is responsible for no less than the future of food security, which "relies on the development and production of plant and animal crops that are both robust and resilient. Research activities centering on the genomics, bioinformatics, and computational biology of plants and animals — as well as their pathogens — have been transformative, enabling scientists and organizations to better feed the world and improve the quality of food and animal crops."

Farmers must intelligently manage their operations to maximize every available resource – and regardless of seasonal crop yields, data is always in abundance on the farm. The challenge is not understanding that it exists, it's determining how to use it to help make smart

business decisions.

A new breed of technology experts broadly called Agriculture Technology Providers (ATPs) is confronting these challenges. DuPont Pioneer began offering yield-monitoring decision services about a decade ago, followed a few years later by variable-rate seeding prescriptions. Monsanto's Climate Corp. offers decision-support tools designed to help farmers increase yields, decrease costs and save time. Hundreds more have cropped up with promises to crunch farming data and deliver actionable insights.

Recognizing that selecting the right ATP is a competitive advantage in today's marketplace, the American Farm Bureau Federation (AFBF) has published a variety of resources regarding agricultural big data. One video specifies the following topics farmers must explore in order to protect the operational, contractual and legal standing of their business when looking to procure an ATP:

- **Ownership.** The AFBF believes farmers own information generated on their farming operations. However, farming is complex and dynamic and it is the responsibility of the farmer to agree upon data use and sharing with the other stakeholders with an economic interest such as the tenant, landowner, cooperative, owner of the precision agriculture system hardware, and/or ATP. The farmer contracting with the ATP is responsible for ensuring that only the data they own or have permission to use is included in the account with the ATP.
- **Collection, access and control.** An ATP's collection, access and use of farm data should be granted by agreement only with the affirmative and explicit consent of the farmer.
- **Notice.** Farmers must be notified that their data is being collected and about how the farm data will be disclosed and used. This notice must be provided in an easily located and readily accessible format.
- **Third-party access and use.** Farmers also need to know who, if anyone, will have access to their data beyond the primary ATP and how they will use it.
- **Transparency and consistency.** ATPs shall notify farmers about the purposes for which they collect and use farm data. An ATP's principles, policies and practices should be transparent and fully consistent with the terms and conditions in their legal contracts. An ATP will not change the customer's contract without his or her agreement.
- **Choice.** ATPs should explain the effects and abilities of a farmer's decision to opt in, opt out or disable the availability of services and features offered by the ATP. If multiple options are offered, farmers should be able to choose some, all, or none of the options offered.
- **Portability.** Within the context of the agreement and retention policy, farmers should be able to retrieve their data for storage or use in other systems, with the exception of the data that has been made anonymous or aggregated and is no longer specifically identifiable.
- **Data availability.** ATPs agree they should provide for the removal, secure destruction and return of original farm data from the ATP, and any third party with whom the ATP has shared the data, upon request by the account holder or after a pre-agreed period of time.
- **Market speculation.** ATPs will not use farm data to illegally speculate in commodity markets.

- **Liability and security safeguards.** The ATP should clearly define terms of liability. Farm data should be protected with reasonable security safeguards against risks such as loss or unauthorized access, destruction, use, modification or disclosure. Policies for notification and response in the event of a breach should be established.

"Big data" is a business mega-trend that we want you to not only understand, but integrate wisely into your operations. Please contact Foster Swift's team of experienced agricultural law attorneys for assistance with the changing nature of the farming industry, including the technologies – and related considerations and liabilities – driving that change.